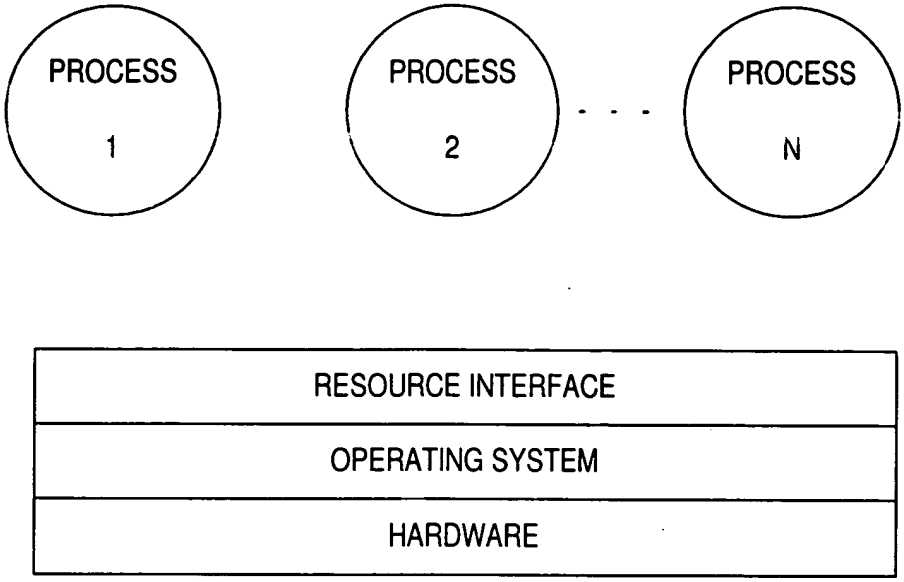

FIGURE 1

Petitioner's Exhibit 1015
Page 71

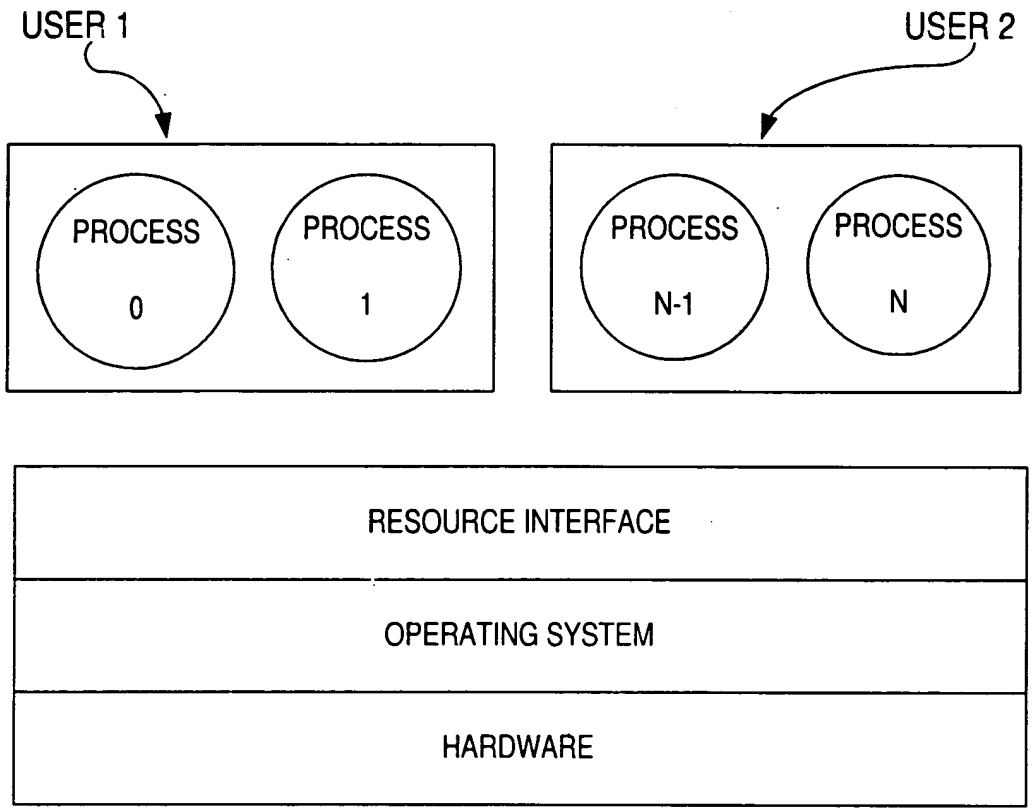
USER 1
USER 2
PROCESS 0
PROCESS 1
PROCESS N-1
PROCESS N
RESOURCE INTERFACE
OPERATING SYSTEM
HARDWARE

FIGURE 2

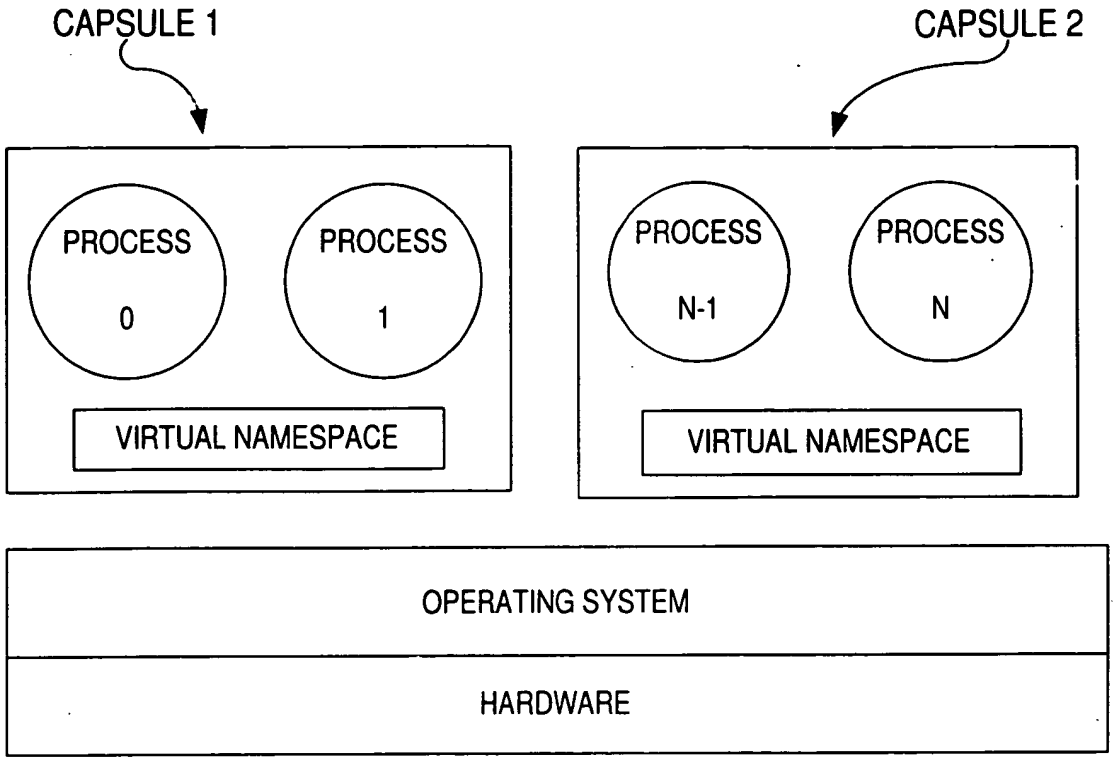
CAPSULE 1
CAPSULE 2
PROCESS 0
PROCESS 1
PROCESS N-1
PROCESS N
VIRTUAL NAMESPACE
VIRTUAL NAMESPACE
OPERATING SYSTEM
HARDWARE

FIGURE 3

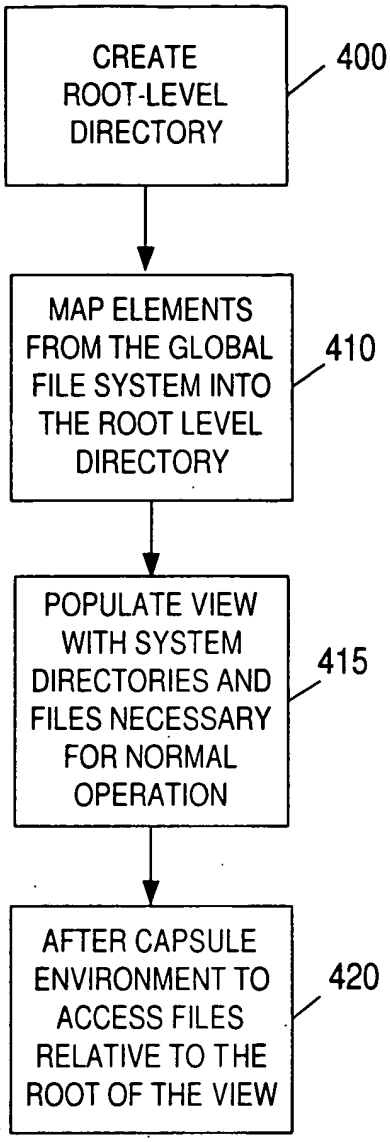
CREATE ROOT-LEVEL DIRECTORY
400
MAP ELEMENTS FROM THE GLOBAL FILE SYSTEM INTO THE ROOT LEVEL DIRECTORY
410
POPULATE VIEW WITH SYSTEM DIRECTORIES AND FILES NECESSARY FOR NORMAL OPERATION
415
AFTER CAPSULE ENVIRONMENT TO ACCESS FILES RELATIVE TO THE ROOT OF THE VIEW
420

FIGURE 4

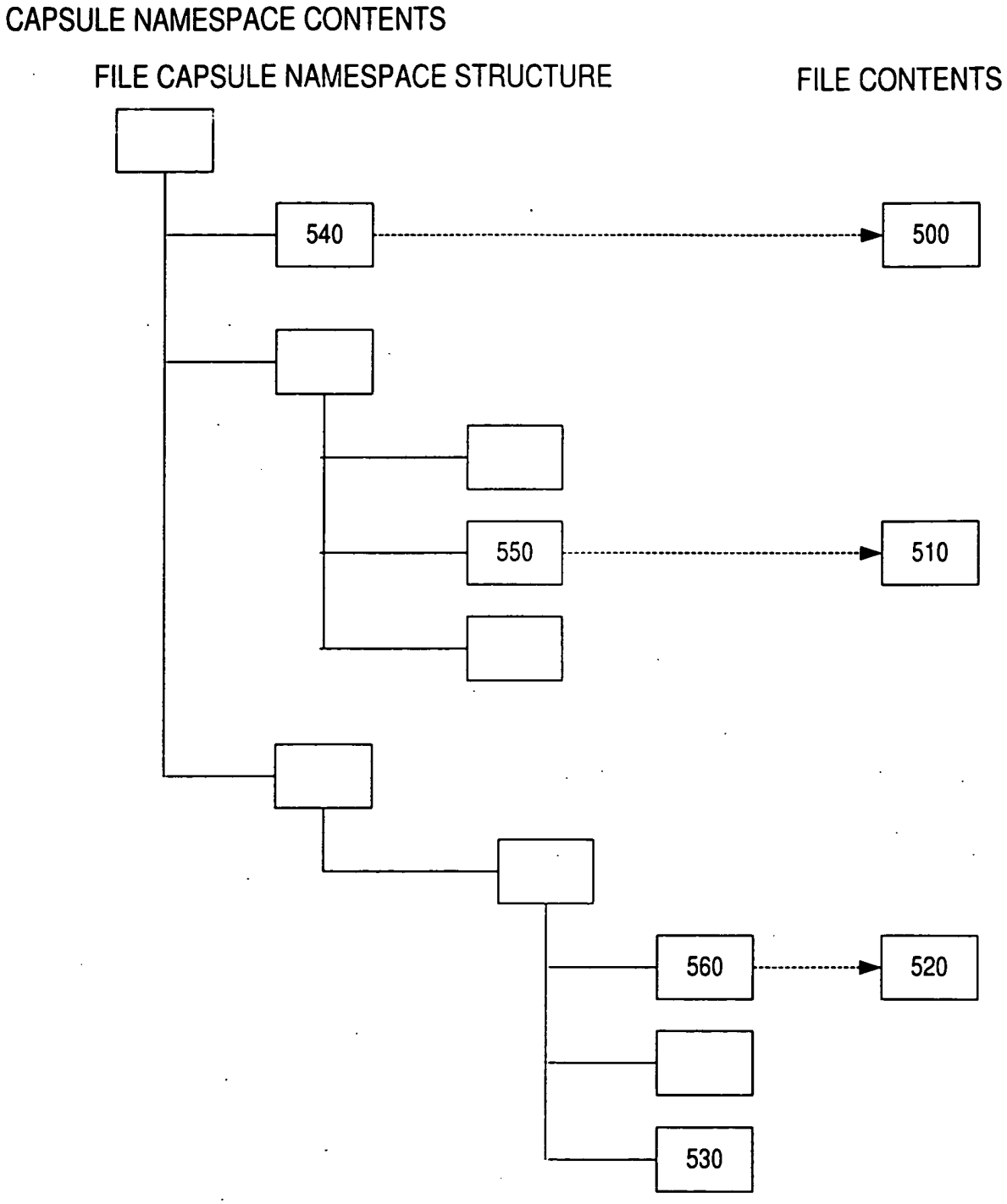
CAPSULE NAMESPACE CONTENTS
FILE CAPSULE NAMESPACE STRUCTURE
FILE CONTENTS
540
500
550
510
560
520
530

FIGURE 5

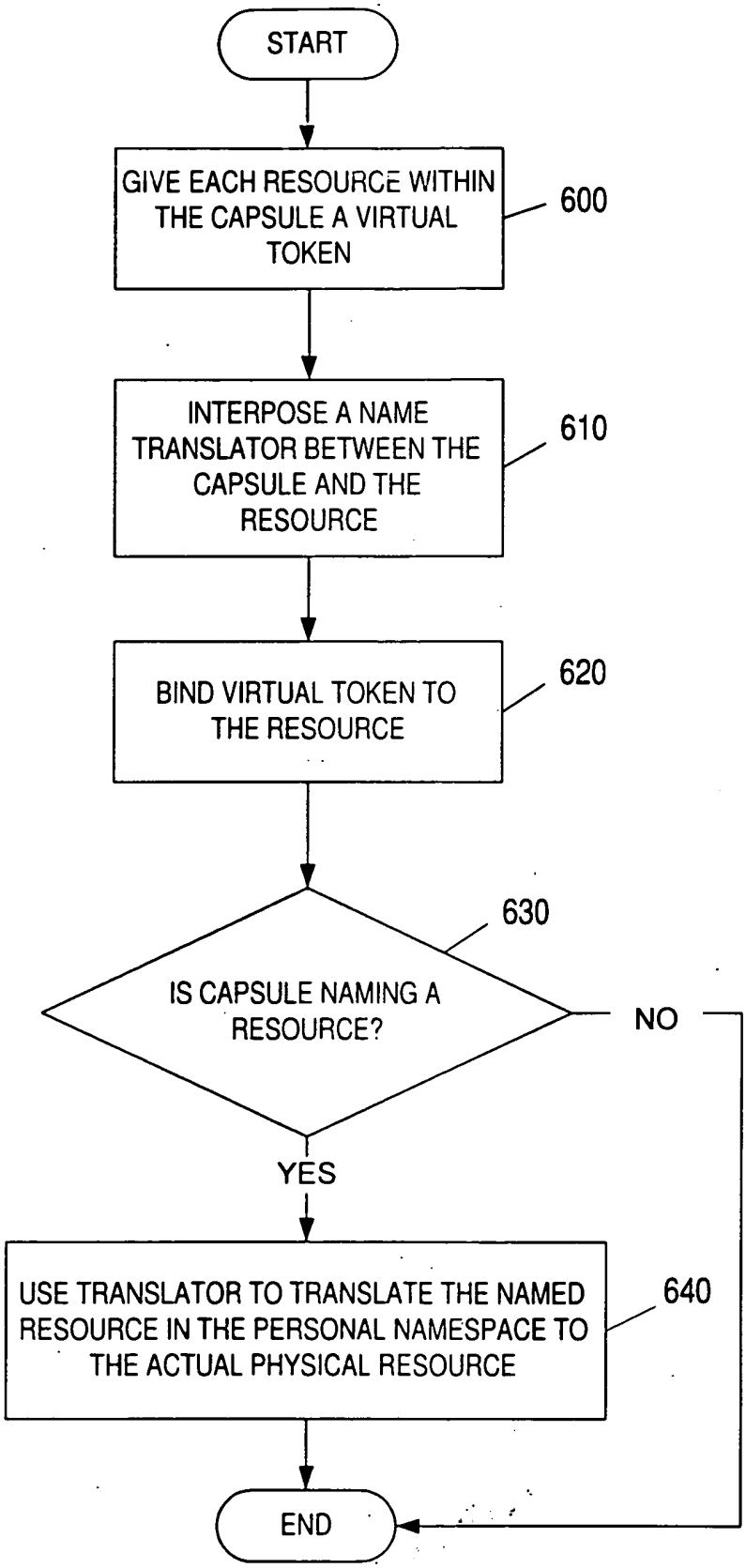
START
GIVE EACH RESOURCE WITHIN THE CAPSULE A VIRTUAL TOKEN
600
INTERPOSE A NAME TRANSLATOR BETWEEN THE CAPSULE AND THE RESOURCE
610
BIND VIRTUAL TOKEN TO THE RESOURCE
620
IS CAPSULE NAMING A RESOURCE?
630
NO
YES
USE TRANSLATOR TO TRANSLATE THE NAMED RESOURCE IN THE PERSONAL NAMESPACE TO THE ACTUAL PHYSICAL RESOURCE
640
END

FIGURE 6

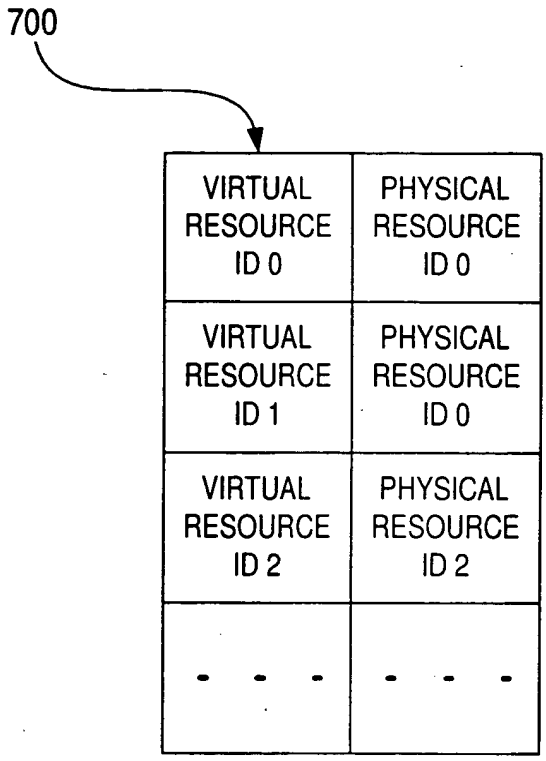
700
VIRTUAL RESOURCE ID 0
PHYSICAL RESOURCE ID 0
VIRTUAL RESOURCE ID 1
PHYSICAL RESOURCE ID 0
VIRTUAL RESOURCE ID 2
PHYSICAL RESOURCE ID 2
- - -
- - -

FIGURE 7

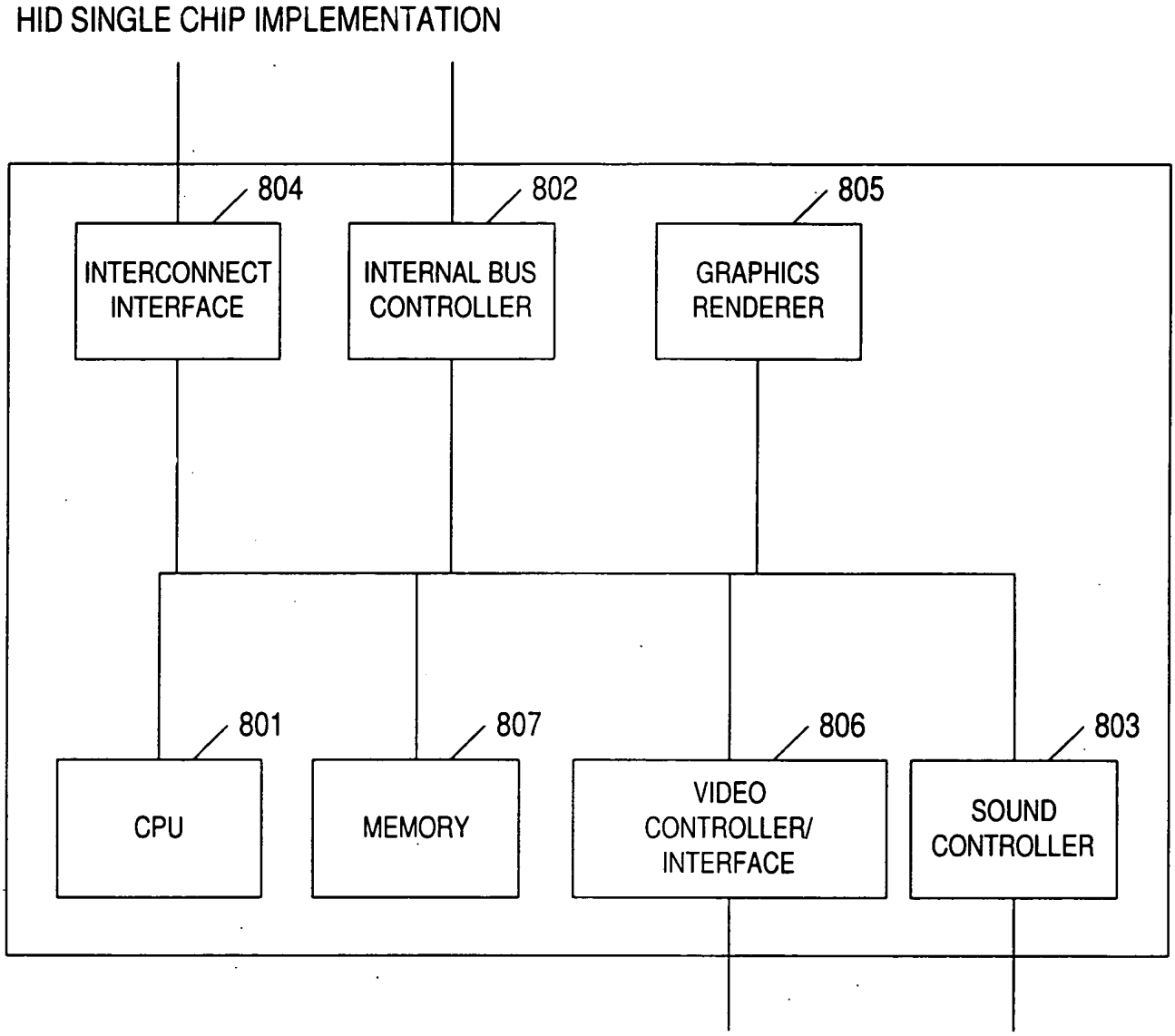
HID SINGLE CHIP IMPLEMENTATION
804
802
805
INTERCONNECT INTERFACE
INTERNAL BUS CONTROLLER
GRAPHICS RENDERER
801
807
806
803
CPU
MEMORY
VIDEO CONTROLLER/ INTERFACE
SOUND CONTROLLER

FIGURE 8

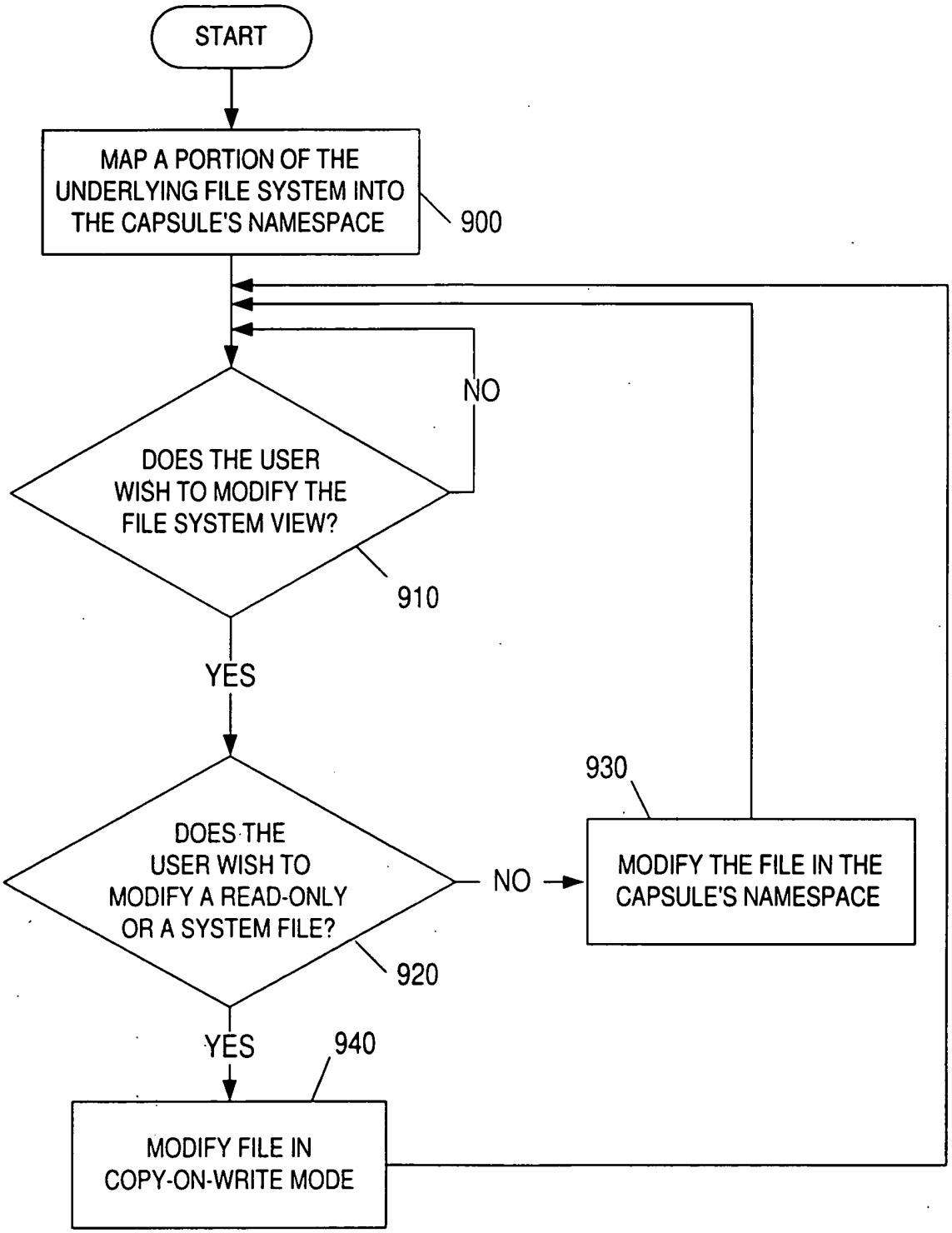
START
MAP A PORTION OF THE UNDERLYING FILE SYSTEM INTO THE CAPSULE'S NAMESPACE
900
DOES THE USER WISH TO MODIFY THE FILE SYSTEM VIEW?
NO
910
YES
DOES THE USER WISH TO MODIFY A READ-ONLY OR A SYSTEM FILE?
NO
930
MODIFY THE FILE IN THE CAPSULE'S NAMESPACE
920
YES
940
MODIFY FILE IN COPY-ON-WRITE MODE

FIGURE 9

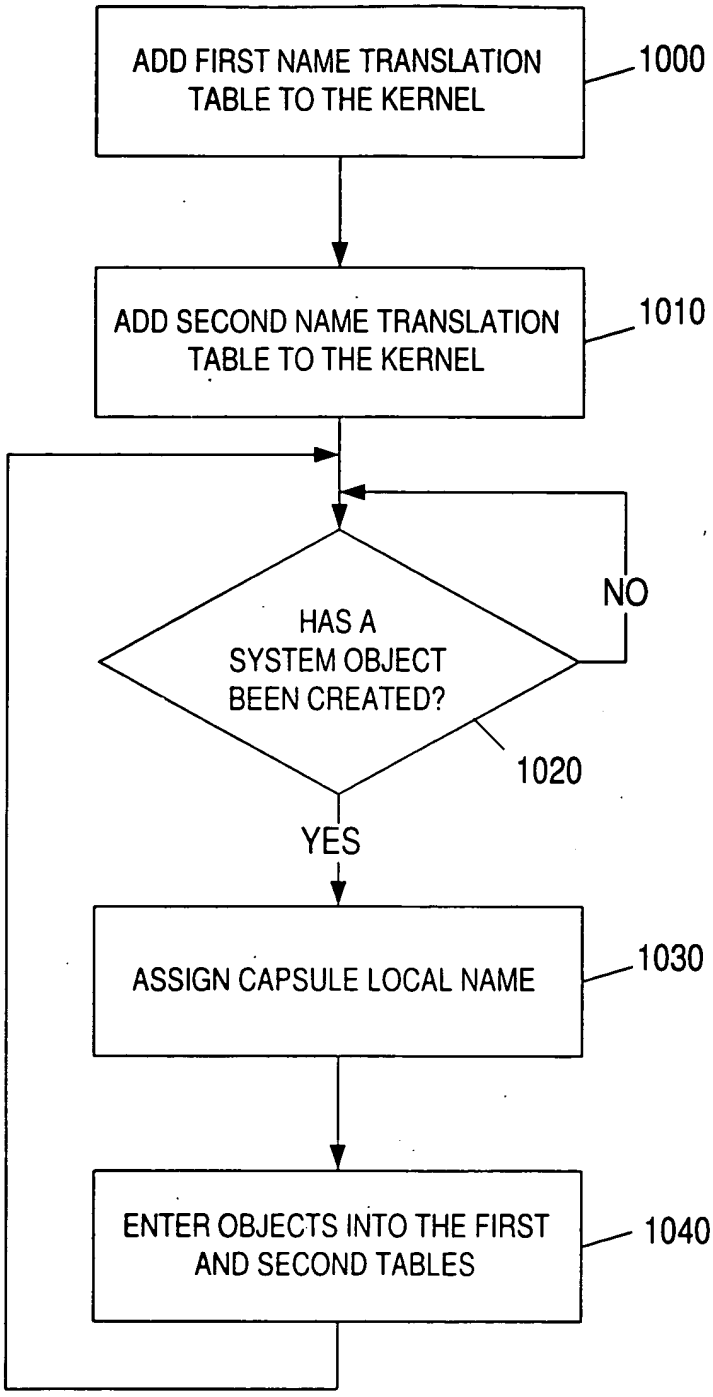
ADD FIRST NAME TRANSLATION TABLE TO THE KERNEL
1000
ADD SECOND NAME TRANSLATION TABLE TO THE KERNEL
1010
HAS A SYSTEM OBJECT BEEN CREATED?
NO
1020
YES
ASSIGN CAPSULE LOCAL NAME
1030
ENTER OBJECTS INTO THE FIRST AND SECOND TABLES
1040

FIGURE 10

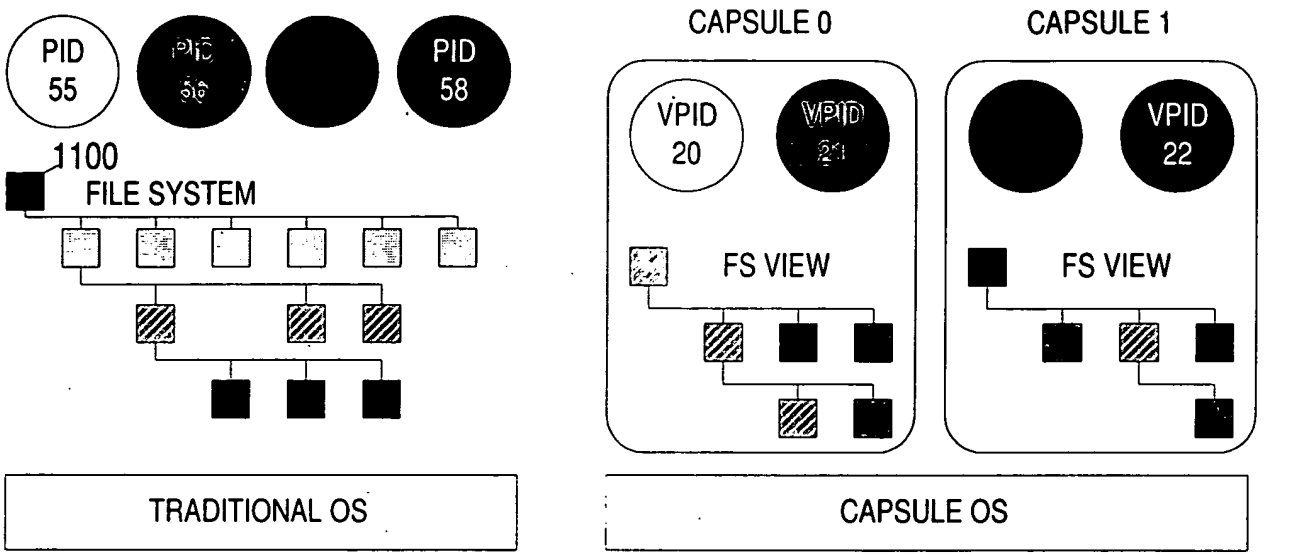
PID
55
PID
58
1100
FILE SYSTEM
TRADITIONAL OS
CAPSULE 0
CAPSULE 1
VPID
20
VPID
22
FS VIEW
FS VIEW
CAPSULE OS

FIGURE 11

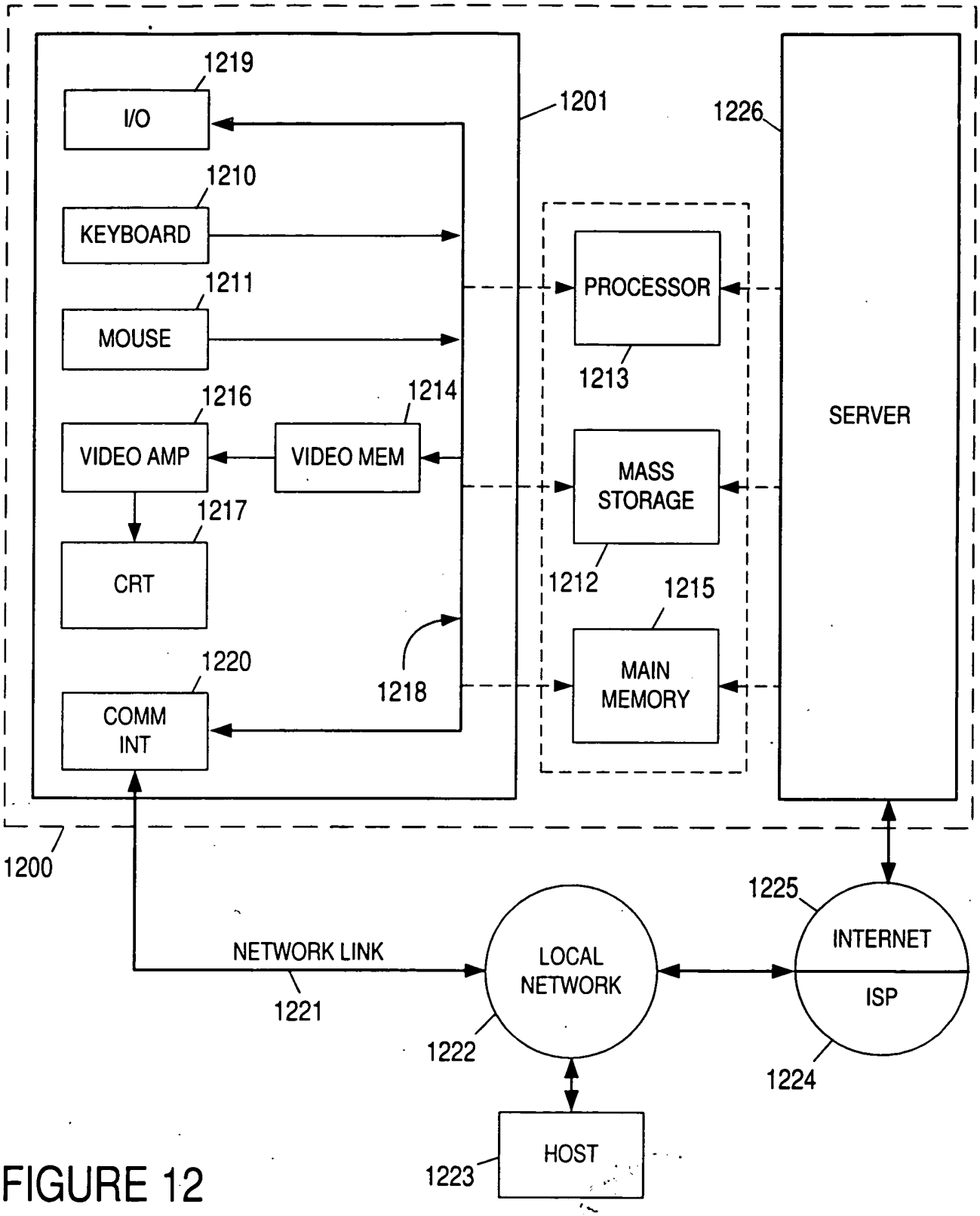
1219
I/O
1201
1226
1210
KEYBOARD
1211
MOUSE
PROCESSOR
1213
SERVER
1216
1214
VIDEO AMP
VIDEO MEM
MASS STORAGE
1217
CRT
1212
1215
1220
1218
MAIN MEMORY
COMM INT
1200
1225
INTERNET
NETWORK LINK
LOCAL NETWORK
ISP
1221
1222
1224
HOST
1223

FIGURE 12

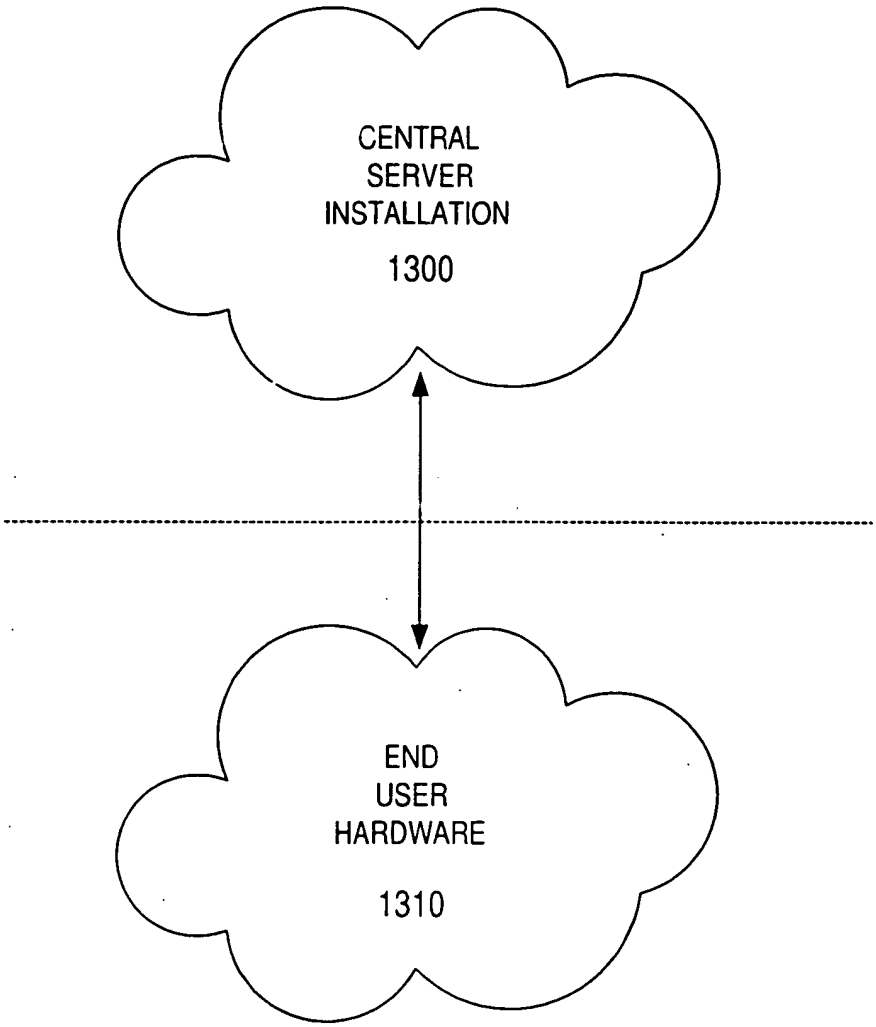

FIGURE 13

FP0205 4/8/05 09:44:02

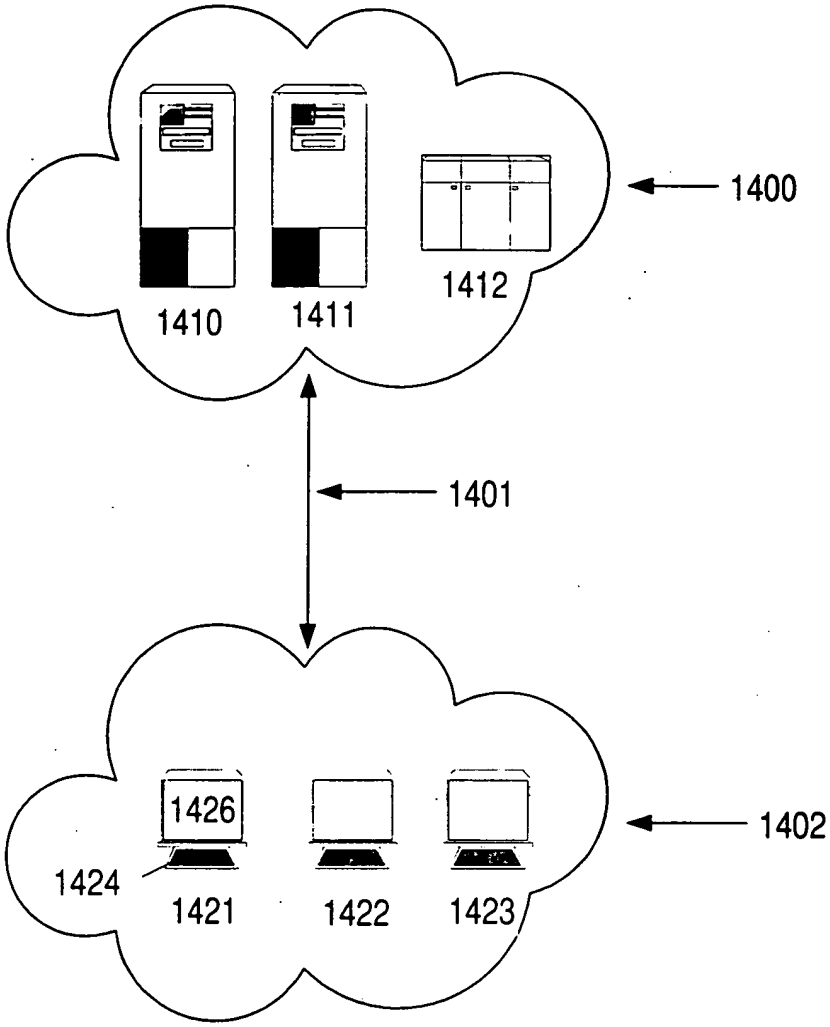

FIGURE 14

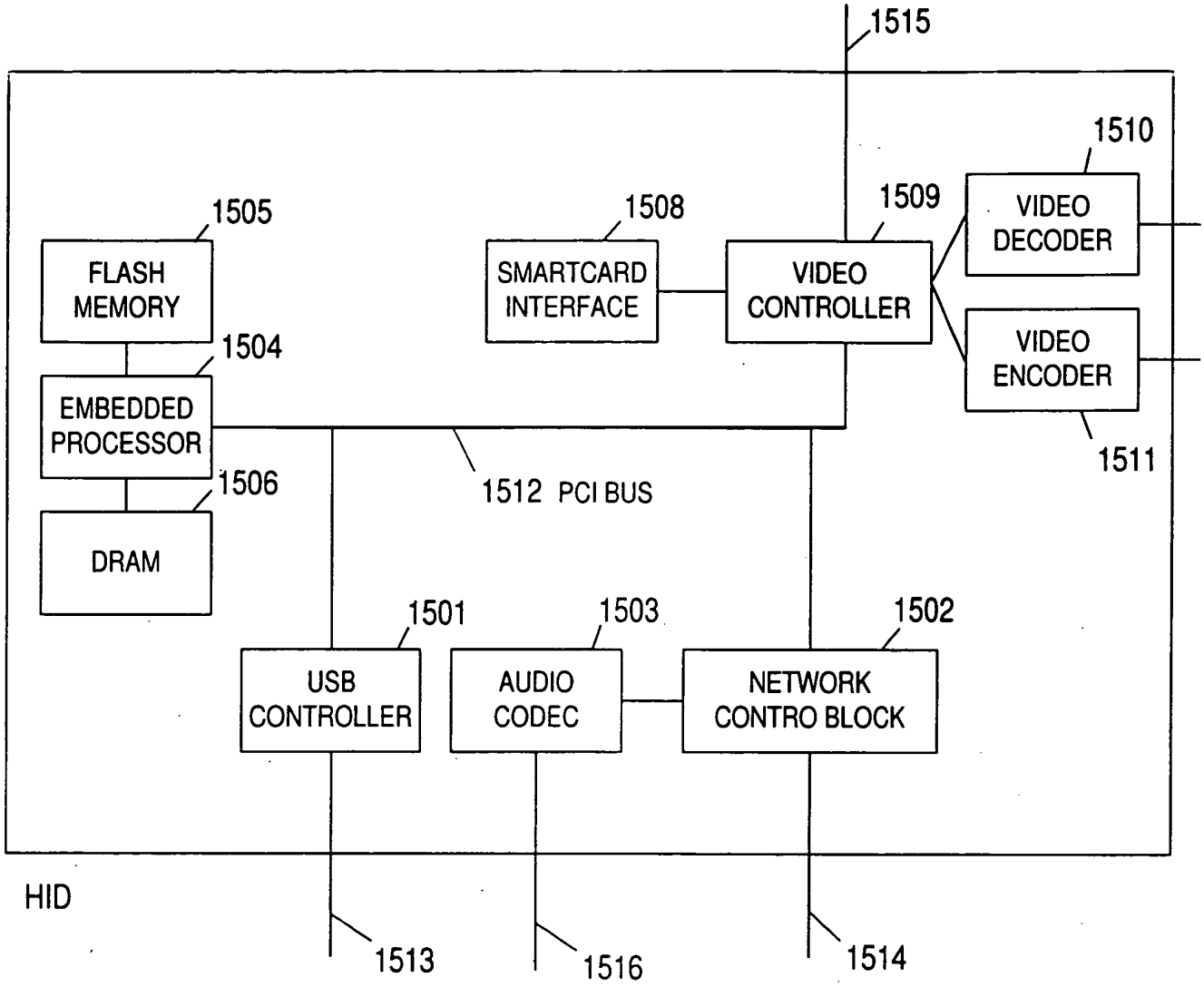
1515
1510
1505
1508
1509
VIDEO DECODER
FLASH MEMORY
SMARTCARD INTERFACE
VIDEO CONTROLLER
1504
VIDEO ENCODER
EMBEDDED PROCESSOR
1511
1512 PCI BUS
1506
DRAM
1501
1503
1502
USB CONTROLLER
AUDIO CODEC
NETWORK CONTRO BLOCK
HID
1513
1516
1514

FIGURE 15